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Economic Benefits Study: Contributions of CVS Caremark to Michigan's Economy

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I. Executive Summary

CVS Caremark Corporation (“CVS Caremark” or “Company”) is a pharmacy innovation company with extensive operations in Michigan. In 2011, CVS Caremark’s Michigan operations contributed approximately \$520 million to Michigan’s gross domestic product (“GDP”) and supported more than 8,000 jobs in the state (see Table 1).

Over the next ten years combined, CVS Caremark’s contribution to Michigan’s total GDP will be approximately \$7 billion if its growth matches the average annual growth for the national economy (an estimated 4.8%) as projected by the Congressional Budget Office.¹ If CVS Caremark’s growth matches its recent revenue growth (16% on average since 2001), its contribution to Michigan’s total GDP over the next ten years would increase to approximately \$15 billion.

OVERVIEW OF APPROACH

CVS Caremark retained Anderson Economic Group (“AEG”) to study the economic scope of the Company’s operations in Michigan. The specific model used is an input-output model, which uses the U.S. Department of Commerce Regional Input-Output Modeling System (“RIMS II”) to estimate spending, employment, earnings, and value added in a region due to an increase in final demand. AEG utilized the RIMS II modeling system as well as information provided by CVS Caremark regarding its direct activities within Michigan.²

CVS Caremark’s economic activity is measured by the following:

1. **Employment**—Jobs supported by CVS Caremark operations in the state.
2. **Earnings**—Gross compensation (e.g. wages, salaries, health benefits, insurance) supported by CVS Caremark’s operations in the state.
3. **Tax Revenue**—State and local revenue from major taxes supported by CVS Caremark’s operations in the state.
4. **Value Added**—The overall income supported by CVS Caremark’s activities in the state. This includes compensation paid to workers, net profits earned by local businesses, and taxes paid to state and local governments. This is CVS Caremark’s contribution to Michigan’s GDP.

For each of the above measures, we estimated two types of impacts: the *direct impact*, which includes CVS Caremark’s direct expenditures, employment, and wages paid to employees in Michigan during 2011, and the *indirect and induced*

1. Average annual growth in nominal GDP between 2012 and 2021 from the Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012-2022*, January 2012 Baseline Forecast.
2. This report includes all CVS Caremark spending in our analysis in order to estimate the economic scope (or footprint) of the Company’s activity in Michigan, as opposed to the Company’s net economic impact.

impacts, which are the expenditures made by suppliers and households as initial expenditures were re-spent in the local economy.

SUMMARY OF FINDINGS

Table 1 summarizes the economic scope of CVS Caremark operations in Michigan during 2011. We estimate that CVS Caremark's operations supported over 8,000 jobs and \$283 million in earnings in Michigan last year. CVS Caremark's contributions to GDP (or its value added) was almost \$520 million in 2011.

TABLE 1. Economic Scope of CVS Caremark Operations in Michigan, 2011

	A Direct	B Indirect & Induced	C = A + B Total
Employment	5,274	2,786	8,060
Earnings (millions of \$)	\$188.9	\$94.8	\$283.7
Tax Revenue (millions of \$) ^a	\$87.7	\$18.3	\$106.0
Value Added (millions of \$)	\$307.2	\$212.6	\$519.8

Source: AEG Estimate using CVS Caremark data and Bureau of Economic Analysis RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

- a. "Direct" tax revenue shown here includes personal income tax withheld from employee wages. In the value added calculation, we make sure to exclude this withholding as to not double count.

II. About CVS Caremark

CVS Caremark provided the following description of its operations:

CVS Caremark is a pharmacy innovation company dedicated to helping people on their path to better health. The Company is uniquely positioned to provide caring expert guidance, new cost-effective solutions, and convenient access to pharmacy care and engages plan members in behaviors that improve their health and lower overall health care costs for health plans, plan sponsors and their members. CVS Caremark is a market leader in mail order pharmacy, retail pharmacy, specialty pharmacy, and retail clinics, and is a leading provider of Medicare Part D Prescription Drug Plans. As one of the country's largest pharmacy benefits managers (PBMs), CVS Caremark provides access to a network of approximately 65,000 pharmacies, including more than 7,300 CVS/pharmacy® stores that provide unparalleled value and service to consumers. Among the solutions provided that make a difference are clinical offerings such as the signature Pharmacy Advisor™ program, innovative generic step therapy and genetic benefit management programs that promote more cost effective and healthier behaviors and improve health care outcomes.

The PBM division provides a range of services including mail order pharmacy, specialty pharmacy, plan design consultation and administration, formulary management and claims processing. CVS/pharmacy stores sell prescription drugs and a wide assortment of high-quality, nationally advertised brand name and private label merchandise. Its retail-based health clinic subsidiary, MinuteClinic, utilizes nationally recognized medical protocols to diagnose and treat minor health conditions, perform health screenings, monitor chronic conditions, and deliver vaccinations.

CVS Caremark employs approximately 200,000 colleagues in 44 states, the District of Columbia and Puerto Rico. All of its employees, including pharmacists, pharmacy technicians, nurse practitioners, physicians, finance and sales professionals, technology and information system professionals, front store associates and others are working diligently to expand the Company's role in providing quality health care and to meet the needs of consumers during this unprecedented time of change in the United States health care system.

CVS CAREMARK IN MICHIGAN

CVS Caremark currently maintains extensive operations in Michigan. As of December 2011, these operations include one distribution center totaling 640 thousand square feet, 245 CVS/pharmacy stores and 10 MinuteClinics. The state is also home to a Specialty Mail Order Pharmacy. These operations directly employed nearly 5,300 workers.³ In addition to directly employing workers, CVS Caremark purchases tens of millions of dollars in goods and services from local suppliers.

3. Employment is based on the 2011 fourth quarter report filed with the Michigan Unemployment Insurance Agency.

OVERVIEW OF ECONOMIC SCOPE

III. Economic Scope

The *economic scope* of a company's operations consists of all of the economic activity in the state that is related to that company's operations.⁴ We measure economic activity of CVS Caremark by:

1. Employment

Jobs supported by CVS Caremark's operations.

2. Earnings

Gross compensation (e.g. wages, salaries, health benefits, and insurance) supported by CVS Caremark's operations in the state.

3. Tax Revenue

State and local revenue from major taxes supported by CVS Caremark's operations in the state.

4. Value Added

The overall income supported by CVS Caremark's activities in the state. This includes compensation paid to workers, net profits earned by local businesses, and taxes paid to the government. Value added represents Caremark's contribution to Michigan's GDP.

When CVS Caremark spends money in the state, both for employee wages and purchases of goods and services, it has an impact on the state's economy, and this impact is reflected in the four indicators listed above. There are multiple avenues through which the Company's spending impacts Michigan's economy:

1. Direct Impacts

Direct impacts include activities directly attributable to CVS Caremark's operations in Michigan, such as hiring people and paying wages.

2. Indirect and Induced Impacts

Each expenditure that CVS Caremark makes continues to circulate in the economy, even after the initial money is spent. Suppliers for CVS Caremark stores are part of a supply chain and have vendors of their own who benefit indirectly from CVS Caremark spending. In addition, employees use their wages to buy groceries from the local grocery store, and contractors may use their revenues from CVS Caremark to buy new equipment or expand their office space. Even then, dollars continue to circulate as grocery store owners and equipment providers now have more money with which to purchase goods and services in the local economy.

Direct impacts are taken from CVS Caremark data, which shows the Company's employment, payroll and non-payroll expenditures, and estimated gross margin in the state. We estimate indirect and induced impacts using the Regional Input-Output Modeling System ("RIMS II") multipliers, provided by the Bureau of

4. This report includes all CVS Caremark spending in our analysis in order to estimate the economic scope, as opposed to the Company's net economic impact. See Appendix A.

Economic Analysis ("BEA").⁵ In order to determine these multipliers, the BEA looks at the inputs and outputs of various industries and determines how increased demand in one industry will result in greater earnings, employment, and value added throughout the state. We estimate indirect impacts by applying these "multipliers" to the payroll and non-payroll expenditures made by the Company.

TOTAL ECONOMIC SCOPE

CVS Caremark spent over \$240 million in Michigan in 2011. The Company directly employed 5,274 workers and paid wages and benefits to employees totaling \$188.9 million in 2011. The Company also spent \$67 million on goods and services from vendors in Michigan (see Appendix Table A-7).

The direct spending by CVS Caremark in Michigan only represents a portion of its economic scope. CVS Caremark's direct spending circulated through the economy and created further economic activity (*indirect and induced impacts*).

Table 2 shows the total economic scope of CVS Caremark's operations. In 2011, we estimate that CVS Caremark supported a total of 8,060 jobs. In addition, the Company's activities were related to \$283.7 million in earnings and almost \$520 million in value added. CVS Caremark's activities resulted in an estimated \$106.0 million in state and local tax revenue.

TABLE 2. Economic Scope of CVS Caremark Operations in Michigan, FY2011

	A Direct	B Indirect & Induced	C = A + B Total
Employment	5,274	2,786	8,060
Earnings (millions of \$)	\$188.9	\$94.8	\$283.7
Tax Revenue (millions of \$)	\$87.7	\$18.3	\$106.0
Value Added (millions of \$)	\$307.2	\$212.6	\$519.8

*Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers
Analysis: Anderson Economic Group, LLC*

Table 3 shows how the indirect impacts of CVS Caremark expenditures in the state affect specific industries. The industries most impacted by CVS Caremark expenditures are services industries, with finance, real estate, and professional and business services accounting for nearly half of the value added and the earnings that are caused indirectly by CVS Caremark expenditures. Other industries significantly impacted by CVS Caremark's presence in Michigan are wholesale and retail trade, health care services, and manufacturing.

5. RIMS II is very similar to the IMPLAN model developed by MIG, Inc.

TABLE 3. Indirect Economic Scope of CVS Caremark in Michigan, by Industry Impacted

Impacted Industry	Earnings (millions of \$)	Employment	Value Added (millions of \$)
Agriculture, fishing, forestry, or mining	\$0.6	26	\$1.2
Utilities	\$1.1	12	\$4.3
Construction	\$0.7	17	\$0.9
Manufacturing	\$5.1	93	\$10.0
Wholesale and retail trade	\$14.3	501	\$26.6
Transportation and warehousing	\$2.9	69	\$4.5
Information	\$1.7	33	\$4.8
Finance, insurance, real estate, rental and leasing	\$15.7	497	\$86.5
Professional and business services	\$22.4	468	\$33.2
Educational, health care, and social services	\$19.7	547	\$25.2
Arts, entertainment, recreation, accommodation, and food services	\$5.2	329	\$9.0
Government and other	\$5.3	193	\$6.3
TOTAL	\$94.8	2,786	\$212.6

Sources: AEG Estimates using CVS Caremark data; RIMS II Type II Multipliers

Analysis: Anderson Economic Group, LLC

Note: Differences between totals in this table and Table 2 are due to rounding.

EMPLOYMENT

CVS Caremark reported 5,274 total employees at the end of 2011.⁶ CVS Caremark's expenditures in Michigan (as discussed in "Total Economic Scope" on page 5) resulted in an additional 2,786 indirect and induced jobs in the state. This occurred as money was re-spent by suppliers and created more jobs throughout the economy. See Table 4 below.

TABLE 4. Employment Related to CVS Caremark Operations in Michigan, 2011

Employment at:	A Direct	B Indirect & Induced	C = A + B Total
Michigan Suppliers ^a	N/A	707	707
CVS Caremark Operations	<u>5,274</u>	<u>2,079</u>	<u>7,353</u>
Total Employment	5,274	2,786	8,060

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

a. Expenditures include \$67 million in payments to vendors and suppliers with a payment address in Michigan.

6. Employee figures are from the 2011 fourth quarter report, filed with the Michigan Unemployment Insurance Agency.

EARNINGS

CVS Caremark's Michigan operations resulted in \$94.8 million of indirect and induced earnings, in addition to the \$188.9 million in direct salary, wages, and benefits paid to CVS Caremark employees. See Table 5 below.

TABLE 5. Earnings Related to CVS Caremark Operations in Michigan, 2011

Expenditure Type (millions of \$)	A Direct	B Indirect & Induced	C = A + B Total
Michigan Suppliers	N/A	\$26.3	\$26.3
CVS Caremark Operations	<u>\$188.9</u>	<u>\$68.5</u>	<u>\$257.4</u>
Total Earnings	\$188.9	\$94.8	\$283.7

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers
Analysis: Anderson Economic Group, LLC

**VALUE ADDED
(SHARE OF GDP)**

Value added, also known as contribution to GDP, represents the overall income generated by CVS Caremark's operations in Michigan. It can be estimated using information on CVS Caremark's compensation paid to employees, taxes paid, and profits generated by its business. Using this information, and information on the non-payroll expenditures by CVS Caremark, we estimate that the Company's operations resulted in \$212.6 million in value added in the Michigan economy, in addition to the \$307.2 million in direct value added due to net profits, state and local taxes, and wages paid to CVS Caremark employees.

TABLE 6. Value Added Related to CVS Caremark Operations in Michigan, 2011

Expenditure Type (millions of \$)	A Direct	B Indirect & Induced	C = A + B Total
Michigan Suppliers	N/A	\$71.6	\$71.6
CVS Caremark Operations	<u>\$307.2</u>	<u>\$141.0</u>	<u>\$448.2</u>
Total Value Added	\$307.2	\$212.6	\$519.8

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers
Analysis: Anderson Economic Group, LLC

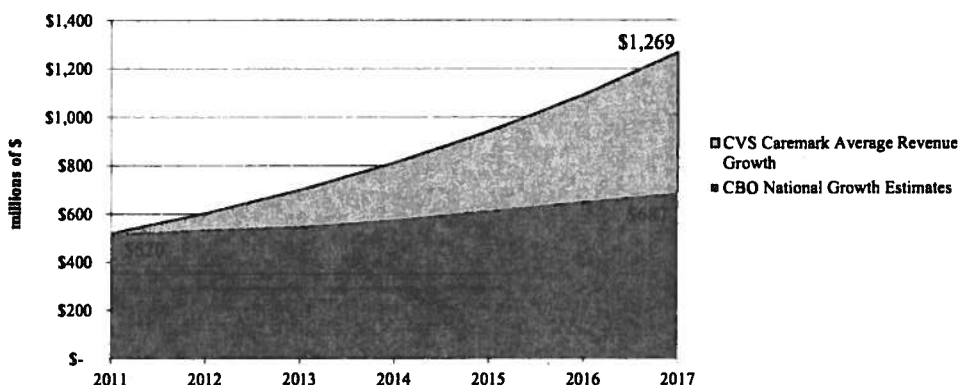
Notes: All value added related to state and local taxes paid and net profits are included in the line item for CVS Caremark Operations.

Over the next ten years combined, CVS Caremark's contribution to Michigan's total GDP will be approximately \$7 billion if its growth matches the average annual growth for the national economy (an estimated 4.8%) as projected by the Congressional Budget Office.⁷ If CVS Caremark's growth matches its recent revenue growth (16% on average since 2001), its contribution to Michigan's

7. Average annual growth in nominal GDP between 2012 and 2021 from the Congressional Budget Office, *The Budget and Economic Outlook: Fiscal Years 2012-2022*, January 2012 Baseline Forecast.

total GDP over the next ten years would increase to approximately \$15 billion. See Figure 1 for a summary of these trends.

FIGURE 1. Projected Scope of CVS Caremark Operations, Value Added to Michigan's Economy, 2011-2017



Sources: AEG Estimate using CVS Caremark data, CVS Caremark Financial Statements, Congressional Budget Office January 2012 Baseline Forecast
Analysis: Anderson Economic Group, LLC

TAX REVENUES

Businesses like CVS Caremark pay the following types of taxes in Michigan:

1. Taxes on business income and gross receipts.

The main tax on businesses operating in Michigan in 2011 was the Michigan Business Tax (MBT). The MBT had three components: (1) a tax on business income earned in the state at a flat rate 4.95%, (2) a modified gross receipts tax equal to sales less purchases from other firms at 0.8%, and (3) a 21.99% surcharge on the liability from the other two components.

2. Taxes on real and personal property.

Businesses pay state and local property taxes on the real property (e.g. land and buildings) and personal property (e.g. equipment) they own in the state. Commercial businesses like CVS Caremark pay an average of 5% of the taxable value of their real and personal property in taxes.⁸

3. Collection of sales, use, and excise taxes from customers.

Retail businesses also collect taxes from customers and remit them to the state. This is the case with sales and use taxes that are levied on taxable goods and services at a rate of 6% sold in their stores. This also occurs with bottle deposits, container taxes, and taxes on certain other products.

In 2011, CVS Caremark directly paid or remitted \$80.4 million in Michigan state and local taxes. This includes taxes borne by CVS Caremark, such as taxes on business income and property, and taxes collected from customers, such as

8. The average general property tax was 50.4 mills on commercial property in 2010. The State Education Tax on property tax is 6 mills.

sales taxes. Employees, whose earnings are a direct impact, also had \$7.3 million withheld from their paychecks for Michigan's personal income tax. We have included personal income tax withholding as a tax related to direct activity of CVS Caremark in Table 7 below.⁹

CVS Caremark indirectly generated an estimated \$18.3 million in major state and local taxes in Michigan from the earnings of suppliers in other industries, and the expenditures of its employees. These estimates for tax revenue are captured in the overall impacts estimated in our value added calculations in previous sections, but we show the likely magnitude of these tax payments in Table 7 below.

TABLE 7. Tax Revenue Related to CVS Caremark Operations in Michigan, 2011

Tax Category (millions of \$)	A Direct	B Indirect & Induced	C = A + B Total
Personal Income Tax	\$7.3	\$4.0	\$11.3
Property Taxes	\$11.6	\$8.8	\$20.4
Sales and Use Taxes	\$27.7	\$5.7	\$33.4
Michigan Business Tax	\$16.1	\$0.0	\$16.1
Unemployment Insurance	\$1.1	\$0.0	\$1.1
Other Taxes	<u>\$24.0</u>	<u>\$0.0</u>	<u>\$24.0</u>
Total Tax Revenues	\$87.7	\$18.3	\$106.0

*Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers
Analysis: Anderson Economic Group, LLC*

Taxes Paid by CVS Caremark Employees. We estimate that CVS Caremark employees paid \$16.5 million in income, sales and use, and property taxes in 2011, consisting of \$7.3 million in state personal income taxes withheld by CVS Caremark (direct tax revenue) and an additional \$9.2 million in sales and property taxes (shown in indirect and induced tax revenue) due to CVS Caremark earnings.

We estimate that most of the wages paid to CVS Caremark employees were spent in Michigan with half of this spending on taxable items. This consumption resulted in an estimated \$3.7 million in sales tax revenue. (See "Economic Scope Model" in Appendix A for data and calculations.) Some CVS Caremark employees own a home and pay state and local property taxes. We estimated the likely number of CVS Caremark employees who would own a home using information on average wages of employees and the Bureau of Labor Statistics Consumer Expenditure Survey, which reports information on the consumption patterns, including home ownership, of U.S. residents by income bracket. Using

9. We exclude personal income tax withholding from our direct value added calculation as wages are pre-tax. This avoids double-counting.

this information, and the likely true cash value of homes owned by employees and the millage rates they pay, we estimated that CVS Caremark employees paid \$5.5 million in property taxes last year. (See "Tax Analysis" in Appendix A.)

Tax Revenue from Indirectly-Generated Earnings. Our tax analysis is based on the economic scope of CVS Caremark's operations. As discussed in "Earnings" on page 7, we estimate that due to CVS Caremark's purchases in the state, \$94.8 million in indirect and induced earnings were created last year. Applying the same methodology to these earnings that we applied to employees' earnings, we estimate that this generated \$9.0 million in sales, income, and property tax revenue. (See Appendix Table A-5.)

Appendix A. Data and Methodology

ECONOMIC SCOPE MODEL

This report looks at the economic scope (or footprint) of CVS Caremark's operations in Michigan. This is different from a *net economic study* that would identify earnings, employment, and value added *caused by* the Company's activities in the state after accounting for activity that would be replaced (or substituted) in the company's absence.

In order to estimate the economic scope of CVS Caremark's operations, we used an economic model that translates an increase in demand (e.g. spending) by the Company into earnings, employment, and value added. The specific model we used is the U.S. Department of Commerce Regional Input-Output Modeling System (RIMS II), which uses multipliers to estimate spending, employment, earnings, and value added in a region due to an increase in final demand.¹⁰ We identify our assumptions for inputs and multipliers in the following tables. This avoids the common problems of "black box" models where some of the methodology and assumptions are hidden.

We measured economic scope by looking at *all* expenditures and employment in Michigan related to CVS Caremark's operations. We used the following methodology when estimating economic scope.

1. Identified the impact region for the analysis.

The first step in estimating the economic impact of a company's operations is to select the region where additional earnings and employment occurs. In this analysis, the state of Michigan is the impact region.

2. Assessed the expenditure base.

We assessed payroll and operating expenditures by CVS Caremark that occurred in Michigan in 2011. Data provided by CVS Caremark included the names and locations of vendors so we were able to parse the type of vendor and the nature of their activities for each specific expenditure made in Michigan. We then assigned these expenditures to RIMS II industries. Table A-1 below shows some examples of how we allocated vendor payments to RIMS II industries.

TABLE A-1. Types of CVS Caremark Vendors, by Industry

Industry	Nature of CVS Caremark Vendors
Construction	Industrial pavement and concrete maintenance
Chemical manufacturing	Hair products manufacturer
Food, beverage, and other product manufacturing	Snack foods manufacturer

Sources: CVS Caremark Data

Analysis: Anderson Economic Group, LLC

¹⁰ RIMS II is similar to the IMPLAN model developed by MIG, Inc in that both are input-output models with similar multipliers.

TABLE A-1. Types of CVS Caremark Vendors, by Industry (Continued)

Industry	Nature of CVS Caremark Vendors
Machinery manufacturing	Tax stamp machinery manufacturer
Electrical equipment and appliance manufacturing	Power supply and industrial vehicle manufacturer
Professional, scientific, and technical services	Legal services, architects, supply chain and inventory management
Administrative and support services	Staffing, landscaping and power-washing services
Waste management and remediation services	Hazardous waste disposal, recycling, transportation, and treatment
Ambulatory health services	Physician services
Real estate	Companies that own property for sale, rent, or lease
Securities, commodity contracts, investments	Investment group with ownership in properties
Other services	Workforce development association
Wholesale trade	Food and beverage distributor
Households	Landlords and independent contractors and sub-contractors

Sources: CVS Caremark Data

Analysis: Anderson Economic Group, LLC

3. Estimated economic scope.

To estimate the indirect impact (in terms of earnings, employment and value added) of expenditures, we multiplied the expenditures in each industry by RIMS II multipliers. These multipliers are industry specific, estimated by the U.S. Department of Commerce, and customized to the region. Expenditures were assigned to the RIMS II industry category that most closely corresponded to the given vendor.

We used type II multipliers for our economic impact estimates, because they include indirect as well as induced impacts. Type I multipliers are only appropriate when direct impacts include, in part, changes in regional household consumption. Since our direct impact estimates only include expenditures by CVS Caremark, type II multipliers are appropriate.

See Table A-7, "Economic Scope of CVS Caremark in Michigan, 2011," on page A-7 for a summary of our economic scope analysis.

ECONOMIC SCOPE TABLES

The following tables show how indirect and induced impacts were determined for employment, earnings, and value added in our economic scope analysis.

TABLE A-2. Indirect/Induced Employment Related to CVS Caremark Operations in Michigan

Expenditure Type (millions of \$)		Indirect & Induced Employment per million \$	Indirect & Induced Employment
Michigan Suppliers	\$67.3	10.52	707
CVS Caremark Operations	\$188.9	11.01	<u>2,079</u>
Total Indirect and Induced Employment			2,786

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

Notes: "Indirect & Induced Employment per million \$" is based on the average impact of increased spending by businesses and households across all industries in the state. Benefits only include medical benefits.

TABLE A-3. Indirect/Induced Earnings Related to CVS Caremark Operations in Michigan

Expenditure Type (millions of \$)		Indirect & Induced Earnings per \$ of Spending	Indirect & Induced Earnings (millions of \$)
Michigan Suppliers	\$67.3	0.391	\$26.3
CVS Caremark Operations	\$188.9	0.363	<u>\$68.5</u>
Total Indirect and Induced Earnings			\$94.8

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

Notes: "Indirect & Induced Earnings per \$" is based on the average impact of increased spending by businesses and households across all industries in the state. Benefits only include medical benefits. 401(k) benefits are not included because their relation to current economic activity within the state of Michigan is ill-defined.

TABLE A-4. Indirect/Induced Value Added Related to CVS Caremark Operations in Michigan

Expenditure Type (millions of \$)		Indirect & Induced Value Added per \$ of Spending	Indirect & Induced Value Added (millions of \$)
Michigan Suppliers	\$67.3	1.064	\$71.6
CVS Caremark Operations	\$188.9	0.746	<u>\$141.0</u>
Total Indirect and Induced Value Added			\$212.6

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

Notes: "Indirect & Induced Value Added per \$" is based on the average impact of increased spending by businesses and households across all industries in the state. Benefits only include medical benefits. 401(k) benefits are not included because their relation to current economic activity within the state of Michigan is ill-defined.

TAX ANALYSIS

CVS Caremark provided the following taxes paid in Michigan in 2011:

- Corporate income taxes (in Michigan, this is the Michigan Business Tax)
- Property taxes
- Sales, use and other taxes paid or collected from customers
- Personal income tax withheld and unemployment insurance taxes for employees

We then estimated the sales and property taxes paid by CVS Caremark employees in 2011. We describe our method below, and show summary numbers in Table A-5 below.

TABLE A-5. Tax Revenue Related to CVS Caremark Operations in Michigan, 2011

Tax Category (millions of \$)	CVS Caremark Direct	Employee Taxes	Indirect & Induced	Total Taxes
Personal Income Taxes	\$0.0	\$7.3	\$4.0	\$11.3
Property Taxes	\$11.6	\$5.5	\$3.0	\$20.1
Sales and Use Taxes	\$27.7	\$3.7	\$2.0	\$33.4
Corporate Income Tax	\$16.1	\$0.0	\$0.0	\$16.1
Unemployment Insurance	\$1.1	\$0.0	\$0.0	\$1.1
Other Taxes	<u>\$24.0</u>	<u>\$0.0</u>	<u>\$0.0</u>	<u>\$24.1</u>
Total Tax Revenues	\$80.5	\$16.5	\$9.0	\$106.0

Note: Revenue rounded to the nearest hundred thousand.

Sources: AEG Estimates using CVS Caremark data, RIMS II Multipliers

Analysis: Anderson Economic Group, LLC

Sales and Use Taxes. To determine consumption by CVS Caremark employees in Michigan that was taxed at the 6% sales tax rate, we began with the earnings of employees. We first estimated the average wage within each category of employees (e.g. retail, management, and distribution center). We then estimated the share of earnings spent in a given year using the Bureau of Labor Statistics Consumer Expenditure Survey by income group. For the average earnings of CVS Caremark employees in Michigan, we estimated that 95% of the earnings were consumed. We also made an allowance of 10% for earnings spent outside the state, on vacation for example or through a website where the vendor was in another state (e.g. Amazon sales).

Finally, we looked at the Bureau of Economic Analysis Make and Use Tables and Personal Income, the *State Tax Handbook 2011* on taxable items, and the Bureau of Labor Statistic's Consumer Expenditure Survey to estimate the share of consumption by workers that is subject to the state's sales tax. We estimate that 42% of consumption by workers in the income level analyzed spent their earnings on taxable goods and services. For example, some items such as rent, prescription drugs, and groceries are not subject to the sales tax in Michigan.

Once we had determined taxable purchases we applied the 6% sales tax rate to estimate that workers spent \$3.7 million in sales taxes in 2011. See Table A-6.

TABLE A-6. Estimate of Sales and Use Taxes Paid by CVS Caremark Employees, 2011

	Calculation (in millions)	Sources and Notes
Earnings Paid to CVS Caremark Employees	\$173.7	CVS Caremark data
Share Spent in Michigan	* 85.3% ^a	AEG Estimate using BLS Consumer Expenditure Survey
Estimated Expenditures made in Michigan	\$148.2	
Share Spent on Taxable Items at Retail	* 42%	AEG Analysis using BEA Make and Use Tables and Personal Income, and BLS Consumer Expenditure Survey
Taxable Expenditures	\$62.2	
Sales Tax Rate in Michigan	* 6%	Michigan sales tax rate
Estimated Sales and Use Revenue from CVS Caremark Employees	\$3.7 million	

*Source: AEG Estimate using CVS Caremark data and the U.S. Bureau of Labor Statistics Consumer Expenditure Survey
Analysis: Anderson Economic Group, LLC*

- a. We used the share of income spent by income bracket from the Consumer Expenditure Survey (~5%) and an allocation of 10% of earnings spent outside the state.

Property Taxes. Some CVS Caremark employees own homes in Michigan and pay property taxes. It is likely this is the case for regional managers, specialty pharmacy employees, and some workers in the distribution center and retail stores. It is more likely for employees who are part of a dual-income household to own a home and pay property taxes.

In order to estimate the property taxes paid by these workers, we would need to know the taxable value of their property (which is roughly equal to half of the true cash value) and the property tax rate for where they live as rates vary by local community. We did not have this information, so we used two methods to estimate property taxes paid.

1. Approach 1: Using the Consumer Expenditures Survey

The Consumer Expenditure Survey reports that individuals spend roughly 3% of their income after taxes on property taxes. We multiplied estimated income after taxes by income bracket for CVS Caremark employees by the percentage of income spent on property taxes for this group.

This yielded an estimate of \$5.5 million in property taxes paid (3.3% times \$166.4 million in income after taxes for CVS Caremark employees).

2. Approach 2: Estimate Home Values and Average Property Tax Rates

A second approach estimates the portion of employees who own a home, the likely value of their home, and the property tax rate they pay.

- We estimated home value by multiplying the average salary of a CVS Caremark employee by 3. (As a rule of thumb people purchase homes between 2 to 3 times their annual income.) We chose three because we thought the household income of those employees who own a home would

be 50% to 100% greater than just the CVS Caremark employee's salary, and so multiplying it by 3 would provide a conservative estimate of home value. This yielded a home value that was close to the average home price in southeast Michigan presently.

- We multiplied the estimated home value by 50% to get the taxable value.
- We multiplied the taxable value by 3.9% (average property tax rate in 2009 for the state education tax and general property taxes) to estimate the state and local property taxes.¹¹
- We found that the estimated property taxes were 6% of the salary of employees who purchase a home. The Consumer Expenditure Survey reports that 53% of people with the incomes of CVS Caremark employees own homes. Using 50% as an estimate of employees who own a home, we found that 3% of income after taxes would be spent on property taxes, which is approximately the same percentage as reported in Approach 1 using the Consumer Expenditure Survey.

11. Citizens Research Council, "Outline of the Michigan Tax System," 2010.

Table A-7. Economic Scope of CVS Caremark in Michigan, 2011

Payment Type/Industry Category	Total Expenditures	Final Demand Multipliers			Economic Scope		
		Earnings	Employment	Value Added	Earnings	Employment	Value Added
Construction	\$ 56,282	0.699	18.119	1.137	\$ 39,319	1	\$ 64,004
Chemical manufacturing	\$ 2,907,683	0.356	6.955	0.765	\$ 1,035,426	20	\$ 2,222,923
Food, beverage, and tobacco product manufacturing	\$ 281,813	0.416	10.824	0.825	\$ 117,150	3	\$ 232,608
Machinery manufacturing	\$ 546,740	0.575	12.430	0.986	\$ 314,321	7	\$ 538,812
Electrical equipment and appliance manufacturing	\$ 64,322	0.471	9.873	0.955	\$ 30,296	1	\$ 61,415
Professional, scientific, and technical services	\$ 21,145,696	0.762	16.471	1.281	\$ 16,117,250	348	\$ 27,079,179
Administrative and support services	\$ 1,558,242	0.784	29.585	1.256	\$ 1,221,817	46	\$ 1,956,996
Waste management and remediation services	\$ 605,702	0.521	12.836	1.060	\$ 315,510	8	\$ 642,104
Ambulatory health services	\$ 99,164	0.820	19.434	1.275	\$ 81,304	2	\$ 126,453
Real estate	\$ 39,101,344	0.168	6.517	0.968	\$ 6,549,475	255	\$ 37,842,280
Securities, commodity contracts, investments	\$ 359,133	0.831	29.105	1.194	\$ 298,583	10	\$ 428,876
Other services	\$ 2,000	0.774	23.141	1.184	\$ 1,547	0	\$ 2,369
Wholesale trade	\$ 468	0.602	12.751	1.174	\$ 282	0	\$ 550
Households	\$ 567,309	0.354	11.050	0.715	\$ 200,657	6	\$ 405,456
<i>Memo: Total for Non-payroll Expenditures</i>	\$ 67,295,896				\$ 26,322,936	707	\$ 71,604,026
Employee wages & salary	\$ 173,695,276	0.354	11.050	0.715	\$ 61,436,019	1,919	\$ 124,140,014
Employee health benefits	\$ 15,220,117	0.462	10.450	1.104	\$ 7,031,694	159	\$ 16,809,097
<i>Memo: Total Payroll Expenditures</i>	\$ 188,915,393				\$ 68,467,713	2,078	\$ 140,949,111
<i>Subtotal: Indirect Impacts</i>					\$ 94,790,649	2,786	\$ 212,553,137
<i>Direct Impacts</i>					\$ 188,915,393	5,274	\$ 307,200,000
Total Economic Scope of CVS Caremark in Michigan, FY 2011					\$ 283,706,042	8,060	\$ 519,753,137

Sources: CVS Caremark, Bureau of Economic Analysis RIMS II Multipliers, AEG Estimates

Analysis: Anderson Economic Group, LLC

Notes: Employment multipliers express the number of jobs per \$1 million increase in expenditures by an industry. Value added is defined as the total value of goods and services produced in the region. Expenditures include payments to vendors and suppliers with a payment address in Michigan.

Appendix B. About the Authors

ANDERSON ECONOMIC GROUP

Anderson Economic Group, LLC is research and consulting firm specializing in economics, public policy, finance and business valuation, and market and industry analysis. The firm has offices in Chicago, Illinois and East Lansing, Michigan. AEG has conducted economic and fiscal impact studies for private, public, and non-profit clients across the United States. For more information please visit www.AndersonEconomicGroup.com.

STUDY'S AUTHORS

Caroline M. Sallee. Ms. Sallee is a Senior Consultant and Director of the Public Policy and Economic Analysis practice area.

Ms. Sallee's recent work includes preparing the report *Dollars and Sense*, a 2011 citizen's guide to Michigan's financial health released by Governor Rick Snyder. Ms. Sallee also completes an annual economic impact assessment for Michigan's University Research Corridor (Michigan State University, University of Michigan, and Wayne State University), and has done work for a number of other universities including the University of Chicago. She is also the lead author of the firm's annual 50-state business tax burden study.

Prior to joining Anderson Economic Group, Ms. Sallee worked for the U.S. Government Accountability Office (GAO) as a member of the Education, Workforce and Income Security team. She has also worked as a market analyst for Hábitus, a market research firm in Quito, Ecuador and as a legislative assistant for two U.S. Representatives.

Ms. Sallee holds a Master of Public Policy degree from the Gerald R. Ford School of Public Policy at the University of Michigan and a Bachelor of Arts degree in economics and history from Augustana College.

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Recent projects he has contributed to include a cost-benefit analysis of funding and eligibility changes to Medicaid, an assessment of the effects of personal property tax reform in Michigan, and analyses of the fiscal condition and tax policies of Michigan's state and local governments.

Prior to joining AEG, Mr. Horwitz was the Coordinator of Distribution for the Community Center of St. Bernard near New Orleans, where he oversaw the distribution of donated food, clothes, and household supplies to low-income residents of St. Bernard Parish and New Orleans' Lower Ninth Ward.

Mr. Horwitz holds a Master of Public Policy degree from the Harris School of Public Policy at the University of Chicago and a Bachelor of Arts in Physics and Philosophy from Swarthmore College.